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THE PROS AND CONS OF ARTIFICIAL INTELLIGENCE IN MODERN SPECIALTY LANGUAGE TEACHING / LEARNING

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Annotation

This theoretical literature review critically examines the role of artificial intelligence (AI) in English as a specialty language (ESL) teaching / learning, considering both its potential benefits and limitations. Grounded in specialty language acquisition theories and educational psychology, the article synthesizes findings from 2022–2025 to assess AI-driven tools in gaining smoother writing and speaking skills. The methodology is a conceptual analysis of ten recent studies rather than new empirical research. Key findings indicate that AI can enhance ESL writing through immediate, tailored feedback and improve speaking proficiency via low-anxiety conversational practice. The analysis also shows that AI integration can boost learner's motivation and positive effect (e.g., reduced anxiety and increased confidence), creating a supportive emotional climate for language learning. Additionally, the article discusses the evolving role of teachers: educators become facilitators who integrate AI into education, ensuring technological augments rather than replacing human instructions. The review concludes that while AI offers significant benefits for ESL, effective implementation requires a guided human–AI collaboration.

Key words: Artificial Intelligence (AI); English Specialty Language (ESL); writing proficiency; speaking proficiency; learner's motivation; second language acquisition (SLA*).*

Introduction

The rapid rise of artificial intelligence (AI) in education has sparked debate about its role in teaching specialty language (ESL). While minors argue that AI can enhance personalized learning experiences, others express concerns regarding its limitations in understanding cultural contexts and the nuances of human interaction in language acquisition. Seventilofa (2024) asks whether AI is a helpful resource or a problematic aid in the language learning classroom? The answer may lie in a balanced approach that integrates AI as a supportive resource while maintaining the essential human elements of teaching. By leveraging AI's capabilities for immediate feedback and personalized learning, teachers can enhance the learning experience without compromising the interpersonal dynamics crucial for language acquisition (Kovalenko, Baranivska, 2024). Numerous language assignments for college and university students were prepared prior to the emergence of AI. So, what could be the way to enhance these tasks considering AI? One approach is based on utilization of AI-driven tools that provide personalized feedback on language assignments, helping students identify areas for improvement in real-time. Additionally, integrating AI can facilitate adaptive language learning experiences that cater to individual proficiency levels, thus making tasks more relevant and engaging for learners (Agrawal, 2024) . AI can improve efficiency and personalize learning, but it also raises concerns about over-reliance on technology and less human interaction in teaching.

Purpose and relevance of the article: This article aims to critically examine the usefulness of AI for English as a specialty language teaching and learning through a theoretical lens to provide suggestions for updating tasks for students. It analyzes findings from recent research (2022–2025) alongside established second language acquisition (SLA) theories. The article assesses both the pros and cons by examining the influence of AI on writing assistance, speech enhancement, feedback systems, students' motivation, communication willingness, emotional aspects, and the roles of teachers. As educators consider integrating AI, understanding its theoretical background and empirical effects is crucial.

Theoretical Approach

This research provides a theoretical approach that is based on the analysis of referred literature. Rather than collecting new empirical evidence, it methodically examines and integrates findings from ten recent studies regarding AI in specialty language education. The approach is based on second language acquisition (SLA) theories and educational psychology frameworks:

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- *Social Constructivism:* Vygotsky's (1978) Zone of Proximal Development (ZPD) and the idea of scaffolding helps us to see how AI tools can act as informed partners, supporting learners just past their existing skills. An AI chatbot or tutor can support learning by giving prompt help until learners grasp new language aspects (Peng, Liang, 2025).

- *Self-Determination Theory (SDT):* This theory (Deci, E. L., Ryan, R. M. 1985) examines how AI might satisfy or thwart basic psychological needs (autonomy, competence, relatedness) in learners. It also emphasizes the lasting importance of teacher's support in motivation when AI is involved, e.g. if AI tools enable self-paced learning and instant feedback, they could meet autonomy and competence needs; however, teacher's presence is still crucial for building connections and providing stronger motivational support (Liu et al., 2025).

- *Communicative Competence and Willingness to Communicate:* the willingness to communicate model and affective factors (e.g., foreign language learning anxiety) are used to assess AI's impact on learners' readiness to speak in English. Research suggests that AI-driven conversation practice can lower anxiety and boost self-confidence by providing a low-pressure environment, though individual differences persist (Wu et al., 2025; Peng, Liang, 2025).

- *Technological Pedagogical Content Knowledge*: This perspective helps frame the roles teachers must play to effectively integrate AI chatbots into ESL instruction. Teachers need to develop knowledge of how AI tools intersect with language content and pedagogy, ensuring that technology use aligns with sound teaching principles.

The recent viewpoint is super useful for understanding the roles teachers need to take on to smoothly bring AI chatbots into ESL classes. Teachers should get a grasp on how AI tools connect with language learning and teaching methods, making sure that using tech fits well with good teaching practices (Li, Zhou & Chiu, 2024).

Using these theoretical views, the article performs a qualitative review of the results. It references empirical research such as meta-analyses, controlled experiments, and qualitative case studies (see the Reference list). Therefore, the method is a literature-focused conceptual analysis aimed at exploring AI's value in ESL rather than assessing it directly.

AI in ESL: Benefits and Opportunities

AI-Powered Writing Support: Recent studies suggest AI can significantly assist ESL writing development. For instance, ChatGPT has been shown to provide detailed feedback on student writing, helping learners notice and correct errors in grammar, vocabulary, and style (Poláková, Ivenz, 2024; Fathi, Rahimi, 2024). In one study (Poláková, Ivenz, 2024), 78 out of 110 EFL (English as a Foreign Language) students reported positive experiences with ChatGPT's writing feedback, noting improvements in making text more concise and fixing grammatical mistakes. AI-powered tools can act as writing coaches, providing instant tips for enhancement. The foundation is based on cognitive feedback and the noticing hypothesis: AI feedback encourages students to focus on language structure, which is key to second / specialty language learning. Furthermore, AI mediation can foster self-regulated learning. J. Fathi & M. Rahimi (2024) found that when EFL learners used ChatGPT iteratively to solve writing issues, they gradually required less explicit help – indicating growth in autonomous writing ability. This aligns with Vygotsky's scaffolding: learners move from other regulation (AI guidance) to self-regulation (independent writing) as AI provides tailored support within their ZPD. Interestingly, students valued the unbiased approach of AI support; free from the worry of unfavorable human assessment, they experienced reduced anxiety over writing and became more eager to try new things. These advantages demonstrate that AI has the potential to act as an effective writing mentor, providing feedback that is available around the clock and tailored to individual needs (Fathi, Rahimi, 2024; Poláková, Ivenz, 2024; Stewart et al., 2025).

Enhancing Speaking Proficiency and Pronunciation: A major challenge in ESL is ensuring sufficient speaking practice in relaxed settings. AI brings fresh ideas to address this. Chatbots and voice apps provide a rich speaking atmosphere for students. For example, the *Speeko* AI application was integrated into an ESL speaking course; as a result, students in the AI group showed significantly greater improvement in speaking proficiency and willingness to communicate compared to a control group. The AI app provided instant, personalized feedback on pronunciation and grammar, allowing learners to correct

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mistakes in real-time (Shafiee Rad, 2024). Students also reported increased confidence and reduced anxiety thanks to Speeko's virtual coaching, which offered a low-stakes practice space with immediate validation (Shafiee Rad, 2024; Zheng et al., 2025). In a controlled experiment conducted in China, the use of GPT-4 as a friendly dialogue partner greatly enhanced the undergraduates' oral English skills and boosted their confidence, all while easing their foreign language worries. The GPT-4 group also showed a greater willingness to chat in English compared to their peers who were practicing alone. In this context, the AI serves as a competent companion, consistently accessible for dialogue, thus addressing the challenge of varying skill levels among peers (Zheng et al., 2025). In essence, AI has the wonderful potential to transform speaking practice by offering engaging, understanding, and relaxed speaking companions, which ultimately supports learners in building their fluency and confidence (Shafiee Rad, 2024).

Immediate Feedback and Error Correction: AI's ability to provide immediate feedback is a major benefit in learning languages. Unlike traditional teacher's feedback, which can take time because of big class sizes, AI can offer quick corrections for both writing and speaking. Large language models like GPT-4 can handle nuanced language tasks at scale. Recent study (Stewart et al. 2025) compared human and AI scoring of open-ended vocabulary tests and found GPT-4's scores to be highly comparable to human raters in terms of means, reliability, and variance. The AI was able to find good answers (in learners' first language) almost as effectively as bilingual human judges, and it even found common ground on some unique translations quite often. This shows that AI can be a wonderful support for teachers in handling the often-tedious task of grading while still being precise. However, the same study kindly reminds us that AI feedback or scoring isn't always perfect. Less advanced models (like a small Llama model (Llama is a family of large language models (LLMs) released by Meta AI)) sometimes strayed from human opinions, and even the best models occasionally had differing views from humans in complicated situations. Thus, while AI provides efficient feedback (immediate correction, hints and suggestions) which is invaluable for learning, human oversight remains important for quality control, especially in important tasks (Stewart et al., 2025).

Learner Motivation and Willingness to Communicate: Motivation is central to SLA success. AI tools can influence motivation in complex ways. On one hand, engaging AI applications can boost motivation by increasing enjoyment and reducing anxiety. Wu et al. (2025) found that incorporating an AI chatbot into think-pair-share speaking activities notably reduced students' foreign language speaking anxiety while enhancing their foreign language enjoyment. Students interacting with the chatbot reported feeling more confident and less nervous about mistakes before speaking with peers. The AI's human-like conversation and emotional support were cited as key factors that made speaking activities more enjoyable. Higher enjoyment often correlates with higher willingness to communicate, suggesting AI's ability to create a positive emotional climate can motivate learners to speak more (Peng, Liang, 2025; Wu et al., 2025).

Motivation is closely linked to how learners view the usefulness of what they are using. A study conducted over ten weeks that monitored EFL students' eagerness to engage with AI via ChatGPT revealed that students generally held favorable views. ChatGPT was seen in various helpful capacities – including as a source of opinions, a language assistant, a provider of content, and a source of information. These diverse roles contributed to ChatGPT being regarded as a valuable resource, which enhanced its perceived utility and user-friendliness, essential factors of technology acceptance that drive motivation (Peng, Liang, 2025). Interestingly, the study noted that willingness to communicate with AI may depend more on attitudes and convenience than on anxiety. This hints that some learners who are shy in class might still be motivated to communicate with an AI, because they find it easy and helpful too. Overall, research indicates that when implemented thoughtfully, AI can satisfy learners' needs for competence and autonomy, thereby enhancing intrinsic motivation (from Self-Determination Theory perspective). For example, AI allows learners to practice autonomously at their own pace (satisfying autonomy) and see their progress through immediate feedback (satisfying competence). These motivational boosts are among the strongest arguments for AI use in ESL (Liu et al., 2025; Peng, Liang, 2025; Wu, Hapsari, & Huang, 2025).

Emotional Impact and Affective Considerations: Language learning is an emotional journey – fear of embarrassment can hinder practice, while positive emotions can propel engagement. AI introduces a distinct emotional aspect. By offering a supportive, non-critical conversation partner, AI resources establish a *safe environment* for practice. This

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sense of safety can reduce emotional barriers and promote adventurousness with the language. During speaking activities with AI companions, learners have noted reduced anxiety regarding errors and increased confidence when conversing with human classmates afterward. The removal of immediate social judgment encourages students to speak more freely, which accelerates improvement (Wu et al., 2025).

Moreover, various AI applications integrate gamification elements (such as digital badges and fun prompts), which enhances emotional engagement positively. Nevertheless, not every emotional effect is beneficial. Certain learners convey a feeling of absence – a lack of human connection when engaging with AI. While AI can simulate conversation, it may not replicate the empathy and encouragement of a dedicated teacher or peer. Furthermore, if AI responses are perceived as too mechanical or off-target, learners might feel frustrated or less motivated. Empirical findings so far lean toward generally positive emotional outcomes with AI use (enjoyment up and anxiety down), but educators should remain mindful of individual differences (Peng, Liang, 2025; Wu et al., 2025). Some learners might require personal connection to feel emotionally supported, indicating that AI should enhance, rather than substitute, human interaction in ESL settings.

Changing Teacher Roles and Educational Integration: The rise of AI in ESL does not render teachers obsolete; rather, it redefines teacher roles. Teachers are crucial in running effective human–AI collaboration. According to a systematic review by Li, Zhou, & Chiu (2024), teachers must adapt by developing strong digital and AI competencies, and by focusing on needs that AI cannot meet. For example, teachers play roles in providing immediate needs support – helping students formulate questions to ask chatbots or clarifying misunderstandings that AI cannot. Teachers also ensure that basic psychological needs are met autonomy (giving students choice in using AI), competence (learners who struggle with AI prompts), and relatedness (maintaining a human connection). While AI tutors can deliver content and feedback, teachers become facilitators, strategists, and ethicists in the modern classroom (Li, Zhou & Chiu, 2024). They select AI resources and assist students in utilizing them effectively, like how they would use any educational technology. Significantly, educators also act as essential supervisors to tackle AI's limitations (e.g., rectifying an AI error, engaging in discussions about AI-generated information that could be biased or erroneous).The literature emphasizes that AI chatbots are strong allies rather than replacements for teachers (Li, Zhou & Chiu, 2024). When educators combine AI with effective teaching methods, they can greatly improve the learning experiences of students. Nevertheless, this combination presents obstacles: educators require training to grasp AI's features and constraints, as well as to create tasks that leverage AI's advantages (such as repetitive practice and immediate feedback) while addressing its shortcomings (like the absence of genuine understanding or empathy).

Limitations of AI in ESL

Although AI offers a variety of advantages, a comprehensive perspective necessitates an exploration of its constraints and cons:

- *Reliability and Accuracy Issues:* AI technologies, particularly generative models such as ChatGPT, can sometimes generate inaccuracies or *hallucinations* – answers that sound correct but are wrong. In the context of language acquisition, an AI may occasionally provide misleading feedback or mistakenly recognize an incorrect answer as accurate. Depending exclusively on AI could replicate errors if those inaccuracies are not addressed. For important assessments or vital learning materials, human verification is still crucial.

- *Lack of True Understanding:* Current AI lacks a true understanding of language and its implications; it operates mainly by identifying patterns. As a result, an AI may miss nuanced contextual errors or struggle with creative language applications. Students may find the AI's explanations of grammar or vocabulary to be less intuitive than the personalized feedback provided by a teacher. Additionally, an AI cannot fully gauge a student's emotions or adapt teaching methods on the fly in the subtle way that a skilled teacher can.

- *Over-Reliance and Reduced Practice:* If not used correctly, AI tools might cause dependence, making learners rely on AI to complete tasks for them (e.g., letting ChatGPT write an essay draft entirely). This goes against effective learning. There is a chance that students could depend too much on AI-generated responses, which may slow down their skill development. Educators have expressed worries that some learners could use AI as

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an easy way out, leading them to practice less on their own, potentially harming their language learning over time.

- *Ethical and Practical Concerns:* Academic honesty problems occur when students use AI to cheat on their work (like handing in essays created by AI). Moreover, there are worries about data privacy when students engage with AI online – their contributions might be saved or used to improve models without their permission. There are also technical challenges: not every classroom has good internet or devices for AI, and some AI tools require payment.

- *Emotional and Social Drawbacks:* As mentioned, some students feel a lack of human connection when engaging with AI for practice. Completely AI-based practice can turn dull or isolating for some people. Additionally, an AI is incapable of offering true empathy, guidance, or the inspiring energy that enthusiastic educators bring. There exists a subtle significance in human teachers demonstrating the joy of interaction and the cultural intricacies of language, which AI has yet to emulate.

Considering these limitations, the consensus in the literature is that AI is a powerful assistive tool, but not a standalone solution. Kasneci et al. (2023) summarized this nuance, suggesting that ChatGPT-like tools *may benefit or hinder student learning*, and highlighting challenges around bias, over-reliance, and distinguishing AI output from verified knowledge. Therefore, any use of AI in ESL must be accompanied by digital literacy training for students and careful pedagogical planning by teachers (Li, Zhou, & Chiu, 2024).

Conclusions

In answer to the guiding question – Is AI useful or not for teaching and learning English as a second or specialty language? – the evidence suggests that AI can be immensely useful when used as a complementary tool in ESL education.

Benefits of AI in ESL Education: AI technologies offer scalable, personalized, and interactive learning opportunities that can enhance traditional instruction. They are useful for providing instant feedback, rich language input, and low-anxiety practice environments, which have led to observable gains in learners' writing quality, speaking fluency, vocabulary recall, and overall engagement. They also align with motivational theories by fulfilling learners' desires for autonomy (self-directed learning) and competence (noticing progress through feedback), thereby possibly enhancing intrinsic motivation to acquire English.

Limitations and Considerations: However, AI is not panacea. Its usefulness is moderated by how thoughtfully it is integrated. Without teacher guidance and a clear purpose, AI could become a distraction or even a detriment (for instance, if students use it to avoid productive practice or receive unvetted information).

The Role of Teachers: Therefore, although we determine that AI is generally beneficial for ESL, its greatest value emerges when it enhances human teaching instead of trying to substitute it. The teacher's role transforms rather than disappears – educators turn into facilitators of the human-AI relationship, ethical overseers, and strategic interveners concentrating on advanced skills and emotional support.

Recommendations

Drawing on the above analysis, here are key recommendations for teachers and learners in the field of ESL:

Blend AI with Traditional Teaching: ESL teachers should consider incorporating AI tools (like chatbots for conversation practice or writing assistants for drafts) as part of a blended learning approach. For instance, a teacher could give a chatbot interaction as an assignment to enhance dialogue skills, and later utilize class time to discuss that experience, focusing on any cultural or practical elements that the AI overlooked. This leverages AI's strengths (practice and feedback) while retaining human insight.

Teacher Training and Development of Pedagogical Knowledge: Teachers should develop pedagogical knowledge specific to AI, understanding not just how to use the tools, but when and why to use them to support language objectives. A teacher proficient in utilizing AI will understand, for example, how to effectively prompt a chatbot to generate student responses, or how to create an exercise where students initially receive feedback from AI and subsequently participate in peer review or classroom discussions to enhance their understanding.

Focus on Feedback Quality and Learner Strategies: When implementing AI feedback (for writing or speaking), teachers should guide students in using that feedback effectively. This could involve instructing learners on how to pose follow-up inquiries to AI for more clarity

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or guiding them to assess AI recommendations critically instead of just accepting them without question. By cultivating these methods, students engage more actively and reduce the danger of becoming overly dependent on AI.

Maintain Human Interaction Opportunities: Make sure that the use of AI does not entirely take the place of human interaction. Language is inherently social. Experiences such as group discussions, live presentations, and cultural exchanges are essential for enhancing communicative skills. AI can assist students in preparing for these interpersonal interactions (for instance, rehearsing a presentation with an AI mentor), but it should serve as a part of a broader teaching approach that incorporates human feedback and genuine communication.

Address Ethical Use and Set Guidelines: A teacher should set clear guidelines on ethical AI use. This includes defining what constitutes acceptable use (e.g., using AI for practice and brainstorming) versus academic dishonesty (e.g., submitting AI-generated essays). Educating students about the limitations of AI, such as the inability to guarantee truthfulness, will foster critical thinking. Additionally, privacy considerations should be communicated: if students use third-party AI tools, they should be aware of what data might be collected.

Further Research: The researchers continuously evaluate AI tools' effectiveness across different learner populations and contexts. Many studies so far are short-term; more longitudinal research is needed to see how AI affects language proficiency over a year or more, and how it impacts skills like listening or intercultural communication. A promising direction is developing "teacher-like" AI models that incorporate pedagogical knowledge – but always with the view that such models support teachers, not replace them. The potential benefits of AI in ESL are substantial, but they must be realized through careful pedagogical planning and ongoing evaluation. In the end, when utilized wisely, AI has the potential to be a significant partner in enhancing language learning and student results in ESL environments.

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